ABSTRACT

Synthesis *N*-(*p*-tolyl)-(*E*)-(3-methoxy)-cinnamamide and *N*-(*p*-chlorophenyl)-(*E*)-(3-methoxy)-cinnamamide using microwave irradiation

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This study is aimed to synthesize two amide derivatives by using *m*-methoxycinnamoyl chloride. The reaction of *m*-methoxycinnamoyl chloride with *p*-toluidine produced *N*-(*p*-tolyl)-(*E*)-(3-methoxy)-cinnamamide and the reaction with *p*-chloroaniline produced *N*-(*p*-chlorophenyl)-(*E*)-(3-methoxy)-cinnamamide. The methyl (CH_3) substituent in *p*-toluidine is electron donating group, and Chlor (Cl) substituent in *p*-chloroaniline is electron withdrawing group. The electron donating group could increase nucleophile reactivity by increasing electronegativity. Tetrahydrofuran (THF) was used as solvent and triethylamine (TEA) as catalyst. The synthesis was done in the same microwave irradiation condition which was 280 Watt in 5.5 minutes. The percentage yield of *N*-(*p*-tolyl)-(*E*)-(3-methoxy)-cinnamamide was 71 % and *N*-(*p*-chlorophenyl)-(*E*)-(3-methoxy)-cinnamamide was 66 %. There is no significant difference of percent yield from both compounds synthesis. The synthesis of *N*-(*p*-chlorophenyl)-(*E*)-(3-methoxy)-cinnamamide was influenced by the resonance effect better than electron withdrawing effect.

Keyword : *N*-(*p*-tolyl)-(*E*)-(3-methoxy)-cinnamamide, *N*-(*p*-chlorophenyl)-(*E*)-(3-methoxy)-cinnamamide, microwave.